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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,391	11/09/2001	Sheng-Shing Li	PP/1-22278/P5/CGC 2069	2361

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Patent Department
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EXAMINER

CHOI, PETER Y

ART UNIT	PAPER NUMBER
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1794

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/045,391	Applicant(s) LI ET AL.	
	Examiner Peter Y. Choi	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,7-12,17-19 and 25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,7-12,17-19 and 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 7-12, 17-19, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,146,757 to Mor in view of UNITHOX Ethoxylated Alcohols Technical Release 4022.0 (herein referred to as "Technical Release 4022.0")

Regarding claims 1, 2, 7-12, 17-19, and 25, Mor teaches a wettable fiber or filament having a thermoplastic polymer, a first wetting agent and a second wetting agent (column 7 lines 65-67 and column 8 lines 1-5) useful in products such as diaper inner liners, battery cell separators and other applications (column 12 line 50 to column 13 line 54). Mor teaches that the preferred thermoplastic polymer is a polyolefin (column 9 lines 65-67) and that the polyolefin is preferably polyethylene or polypropylene (column 4 line 65 to column 5 line 8, column 5 line 65 to column 6 line 5). Mor teaches that the surface active agent, or wetting agent, is introduced into the bulk polymer resin rather than applying it to the surface of the polymer (column 14 lines 25-35). Mor teaches that incorporating the surfactant into the melt blend assists in resisting migration and transference of the surfactant (column 5 lines 45-50), and that by modifying the percentage of the wetting agent, hydrophilic, smooth fibers and nonwovens with improved textile-like feel and elongation may be formed (column 7 lines 4-62).

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Mor teaches that in a preferred embodiment that a wetting agent may comprise alkoxylated fatty alcohol as a combination of an ethoxylated cetyl alcohol and an ethoxylated stearyl alcohol and preferably contains from about 2 to 10 moles of ethylene oxide condensed thereon (column 6 lines 40-45). Mor teaches that a blend of wetting agents allows a broad range of wetting characteristics. The blend allows control over the degree of wetting and permanence which may be obtained by varying concentrations and the ratio of the first and second wetting agents (column 14 lines 20-25). The present fibers are also useful as a blend component for other fibers whereby the thermoplastic properties as well as the wettability, softeners and lubricity of the fibers are found to be advantageous. The fibers or filaments can be in the form of a woven fabric, a non-woven fabric or a knitted (column 13 lines 25-40).

Regarding claims 1, 2, 7-12, 17-19, and 25, Mor does not appear to specifically teach that the alkoxylated fatty alcohol is at least one compound of the formula $R_1(OCH_2CH_2)_xOH$ where x is 2 or 3 and R_1 is a straight or branched chain alkyl of 28, 30 or 32 carbon atoms. However, Technical Release 4022.0 teaches that UNITHOX ethoxylated alcohols are a novel class of nonionic surfactants derived from very long chain, linear, synthetic alcohols (Technical Release 4022.0, page 1). Technical Release 4022.0 teaches that the average chain length of the hydrocarbon portion of the molecule can be between 26 and 50 carbons (Id., page 1). Technical Release 4022.0 teaches that chemically, UNITHOX ethoxylates can be shown as $CH_3CH_2(CH_2CH_2)_xCH_2CH_2(OCH_2CH_2)_yOH$ (Id., page 1). Technical Release 4022.0 teaches that the relative efficiency of the hydrophilic portion of the molecule can be controlled by varying the starting alcohol and/or the amount of ethylene oxide (Id., page 1). Technical Release 4022.0 teaches that UNITHOX 420 Ethoxylate has an average x/y of 13/2.5 (Id., page 1). Technical

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Release 4022.0 teaches that UNITHOX Ethoxylates can be used in a wide variety of applications such as emulsifiers/lubricants for textile processing and finishing and processing aids (Id., page 2). It would have been obvious to one of ordinary skill in the wettable polymer fiber art at the time the invention was made to form the wettable polypropylene fiber of Mor, wherein the alkoxyated fatty alcohol comprises UNITHOX 420, as taught by Technical Release 4022.0, motivated by the desire of forming a conventional wettable polymer fiber with a compound known in the art to be hydrophilic and suitable for use in textile processing and finishing and processing aids, and such a resulting combination of a known fiber process and a known compound would yield predictable results.

Regarding claim 2, the polyolefin is polypropylene or polyethylene (column 4 line 65 to column 5 line 8, column 5 line 65 to column 6 line 5).

Regarding claims 7 and 8, the compounds of component (b), in total, are present from about 0.1% to about 15% by weight and from about 1% to about 7% by weight, based on the weight of the polyolefin of component (a) (Mor, column 7 lines 12-62). Additionally, it would have been obvious to one of ordinary skill in the wettable polymer art at the time the invention was made to optimize the percentage of component (b) since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In the present case, one of ordinary skill would be motivated to optimize component (b) based on the desired feel and elongation and compatibility with the polymer fiber.

Regarding claims 9 and 12, Mor in view of Technical Release 4022.0 teaches a bi-component fiber comprising a polyolefin component, wherein the polyolefin component

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comprises a melt blend comprising components (a) and (b), and woven or nonwoven fabric comprising bi-component fibers (Mor, column 12 lines 18-29, column 13 lines 28-54).

Regarding claims 10, 11 and 17, Mor in view of Technical Release 4022.0 teaches a woven or nonwoven fabric comprising polyolefin fibers or filaments according to claim 1 (Mor, column 12 lines 18-29, column 13 lines 28-54).

Regarding claim 11, Mor in view of Technical Release 4022.0 teaches a woven or nonwoven fabric wherein the polyolefin is polypropylene or polyethylene (Mor, column 12 lines 18-29, column 13 lines 28-54).

Regarding claim 17, Mor in view of Technical Release 4022.0 teaches an article of manufacture comprising a woven or nonwoven fabric selected from the group consisting of disposable diapers, training pants, feminine napkins, tampons, incontinence care products, wet and dry wipes, wound dressings, surgical capes, filter media and battery separators (Mor, column 12 line 50 to column 13 line 54).

Regarding claim 18, the melt blend additionally comprises an ethoxylated aliphatic alcohol that is not of formula (Ia) (Mor, column 5 line 53 to column 6 line 30).

Regarding claim 19, the melt blend additionally comprises a 2 mole ethoxylated stearyl alcohol (Mor, column 6 lines 31-45, column 9 lines 23-58).

Regarding claim 25, the fiber or filament further comprises a stabilizer selected from the group consisting of hindered amine light stabilizers, phenolic antioxidants, phosphites or phosphonites, hydroxylamines, benzofuranones and hydroxyphenylbenzotriazole, hydroxybenzophenone or tris-aryls-s-triazine UV absorbers (Mor, column 10 lines 25-53).

Response to Arguments

3. Applicants' arguments filed June 18, 2008, have been fully considered but they are not persuasive. Applicants argue that Mor does not teach an alkoxyated fatty alcohol with an alkyl group of 28, 30 or 32 carbon atoms. Additionally, Applicants argue that the performance of UNITHOX 420 as a melt additive to improve the wettability of polyolefin fibers is unexpected and is not predictable.

Regarding Applicants' arguments, Examiner respectfully disagrees. Mor is not solely relied upon to teach an alkoxyated fatty alcohol with an alkyl group of 28, 30 or 32 carbon atoms. Mor teaches a wettable fiber or filament having a thermoplastic polymer, a first wetting agent and a second wetting agent (column 7 lines 65-67 and column 8 lines 1-5) useful in products such as diaper inner liners, battery cell separators and other applications (column 12 line 50 to column 13 line 54). Mor teaches that using surfactants to coat fibers or nonwoven fabrics by spraying, coating or other methods was known in the art (*see* Mor, column 1 lines 40-46, column 2 lines 24-39). Mor teaches various disadvantages of coating fibers or nonwoven fabrics including that the coating is not usually well-bonded to the fiber and that there are quality control issues (*Id.*, column 2 lines 39-47). Mor teaches that incorporating additives into a melt blend is preferable due to the delay of the loss of the surface active agents, the resistance to migration and transference, and the increase in durability (*Id.*, column 5 lines 33-50). Mor notes that polyester liners wet fairly readily and wick effectively but polyester webs have a coarse feeling. Polypropylene provides a much softer web than polyester but it wets poorly (*Id.*, column 13 lines 45-55). Therefore, the modified web of Mor with integrated wetting agent would provide a soft feel and good wetting properties. Mor teaches that the second wetting agent can

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comprise an alkoxyated fatty alcohol (Id., column 6 lines 30-35). Mor teaches that the preferred alkoxyated fatty alcohol has a formula $R-(CH_2CH_2O)_pH$, wherein P is a number ranging from 1 to about 100 and R is an alkyl chain (Id., column 9 lines 23-59).

Mor does not appear to specifically teach that the alkoxyated fatty alcohol is at least one compound of the formula $R_1(OCH_2CH_2)_xOH$ where x is 2 or 3 and R_1 is a straight or branched chain alkyl of 28, 30 or 32 carbon atoms. However, Technical Release 4022.0 teaches that UNITHOX ethoxylated alcohols are a novel class of nonionic surfactants derived from very long chain, linear, synthetic alcohols (Technical Release 4022.0, page 1). Technical Release 4022.0 teaches that the average chain length of the hydrocarbon portion of the molecule can be between 26 and 50 carbons (Id., page 1). Technical Release 4022.0 teaches that chemically, UNITHOX ethoxylates can be shown as $CH_3CH_2(CH_2CH_2)_xCH_2CH_2(OCH_2CH_2)_yOH$ (Id., page 1). Technical Release 4022.0 teaches that the relative efficiency of the hydrophilic portion of the molecule can be controlled by varying the starting alcohol and/or the amount of ethylene oxide (Id., page 1). Technical Release 4022.0 teaches that UNITHOX 420 Ethoxylate has an average x/y of 13/2.5 (Id., page 1). Technical Release 4022.0 teaches that UNITHOX Ethoxylates can be used in a wide variety of applications such as emulsifiers/lubricants for textile processing and finishing and processing aids (Id., page 2). It would have been obvious to one of ordinary skill in the wettable polymer fiber art at the time the invention was made to form the wettable polypropylene fiber of Mor, wherein the alkoxyated fatty alcohol comprises UNITHOX 420, as taught by Technical Release 4022.0, motivated by the desire of forming a conventional wettable polymer fiber with a compound known in the art to be hydrophilic and suitable for use in textile

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processing and finishing and processing aids, and such a resulting combination of a known fiber process and a known compound would yield predictable results.

Regarding Applicants' argument that the compounds of the present invention provide for unexpected wettability, Examiner respectfully disagrees. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Applicants have not claimed water absorption or wettability, or a measurement associated with water absorption or wettability, or a structure or composition to which water absorption or wettability may be attributed, other than the claimed invention. Therefore, the water absorption and wettability characteristics, and arguments associated with such characteristics, appear to be outside the scope of the claimed invention as such characteristics are not claimed.

Additionally, mere recognition of latent properties in the prior art does not render nonobvious an otherwise known invention. *In re Wiseman*, 596 F.2d 1019, 201 USPQ 658 (CCPA 1979). The fact that Applicants have recognized another advantage which would naturally flow from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Applicants argue that incorporating a known material, UNITHOX 420, into polypropylene nonwoven fabrics, results in unexpected outstanding wettability, which is supported by the second Gande Declaration. However, Mor teaches that incorporating surfactants such as alkoxyated fatty alcohols into polypropylene or thermoplastic fibers, was known to predictably form a composite with high permanence of wettability (Mor, column 12

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lines 51-65), including very good wettability with water (Id., column 17 lines 37-41).

Additionally, the second Gande Declaration only compares the known material UNITHOX 420 to UNITHOX 550. However, the claimed invention is not directed to UNITHOX 420; the claimed invention is directed to at least one compound of the formula $R_1(OCH_2CH_2)_xOH$ where x is 2 or 3 and R_1 is a straight or branched chain alkyl of 28, 30 or 32 carbon atoms. Applicants have not shown that the *claimed invention* would have unexpected outstanding wettability.

Similarly, the first Gande Declaration only compares UNITHOX 420 to UNITHOX 480 and UNITHOX 750. Neither of these ethoxylated alcohols are taught nor disclosed in the prior art. Additionally, as set forth above, UNITHOX 420 is not claimed. Therefore, the Declaration is not persuasive as it does not show that the claimed invention necessarily has superior liquid absorption capacity.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Y. Choi whose telephone number is (571)272-6730. The examiner can normally be reached on Monday - Friday, 08:00 - 15:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew T Piziali/
Primary Examiner, Art Unit 1794

/Peter Y Choi/
Examiner, Art Unit 1794